

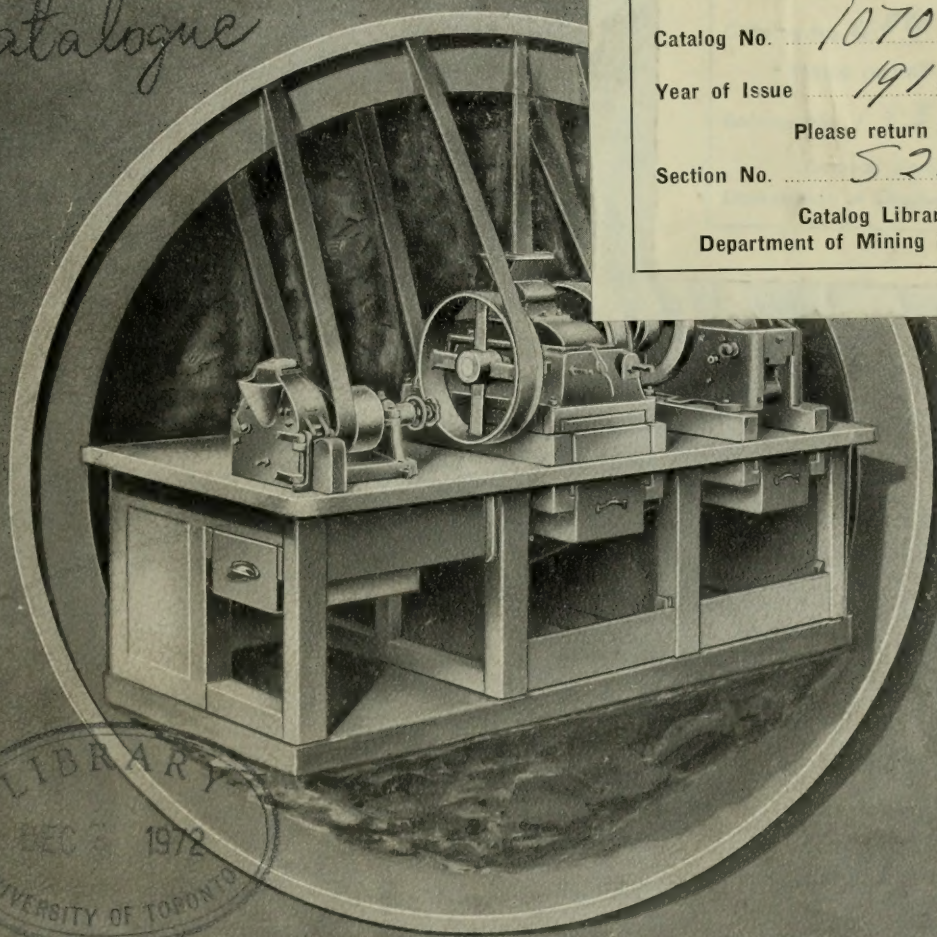
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no. 67A
Engineering

ENGINE STORAGE

STURTEVANT

Mall Company, Boston

Catalogue



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Department of Mining Engineering

LABORATORY

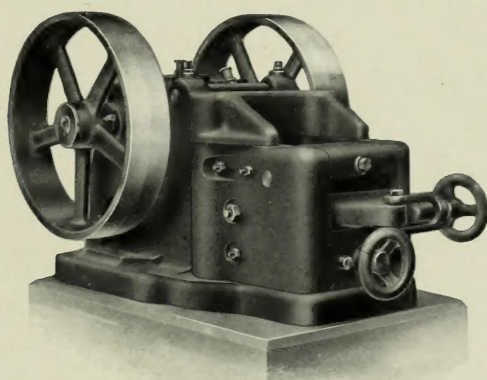
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ESTABLISHED 1883

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STURTEVANT MILL CO.

STURTEVANT MILL CO.



MANUFACTURERS AND EXCLUSIVE
SALES REPRESENTATIVES OF PATENTED

CRUSHING, GRINDING, SCREENING, MIXING,
SACKING AND WEIGHING MACHINERY

MAIN OFFICES AND WORKS HARRISON SQUARE BOSTON, MASS., U. S. A

AUXILIARY WORKS

BUFFALO, N. Y.

AMERICUS, GA.

NEWAYGO, MICH.

SALESMEN'S OFFICES

New York

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Atlanta

Cleveland

Chicago

FOREIGN

STURTEVANT ENGINEERING CO., Ltd., LONDON

Paris

Brussels

Berlin

Vienna

Turin

BECAUSE machines used in laboratory work are small, few manufacturers have given serious thought to designing them. Some large laboratories are using rock-reducing appliances so crude as to be totally unfit for modern sampling. The work, proper for such machinery, has never been sufficiently studied, and consequently laboratory appliances generally give not only small, but uncertain outputs. The ore is generally run through, screened, and the oversize returned again and again until finally worn down to the mesh desired. The close assaying of such a product is not easy, and it but little resembles the actual output of the machinery at the mine.

But sampling machinery should be of the same character as that regularly used. Each sample of ore should be treated exactly as it would be in the mill. With these views we have produced the following machines:

CRUSHERS — Jaw and Toggle Crushers for Coarse, Medium and Fine work. These give a great range of products, for the output may be varied to suit changing requirements. Adjustments are of the simplest character, and the Crusher quickly and easily cleaned. Each test, therefore, is practical and dependable. These breakers in the small sizes crush to $\frac{1}{8}$ inch, and as much coarser as wanted, and do not clog.

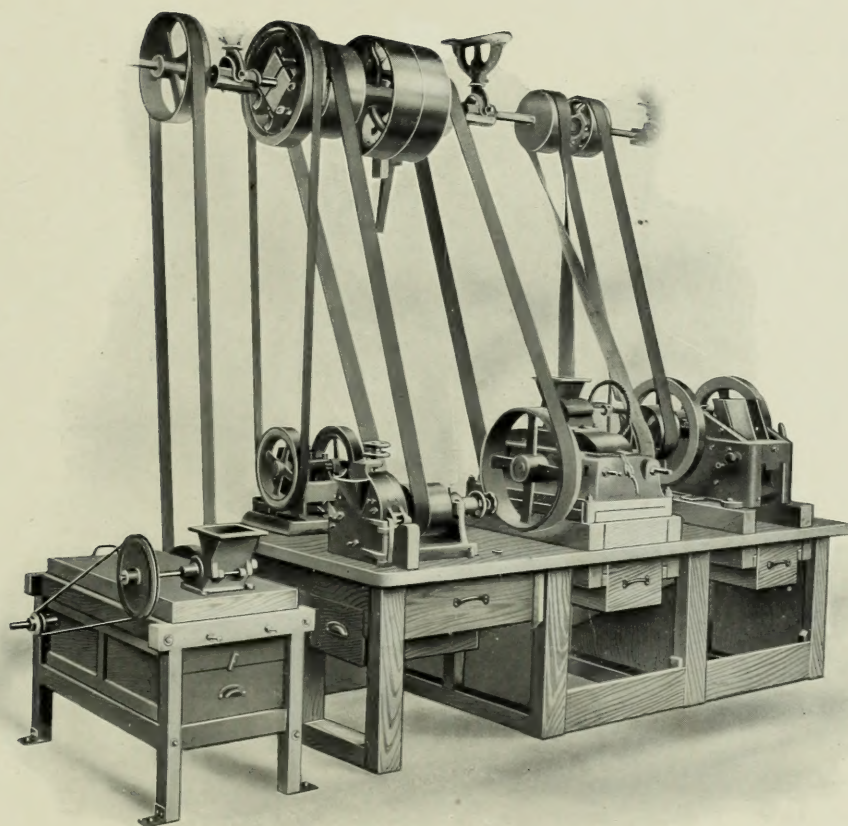
ROLLS — For finer reduction than $\frac{1}{8}$ inch, where concentration or cyaniding processes are contemplated, we supply Rolls. These produce, exactly like the large machines, a minimum of slimes. These rolls are of good capacity.

GRINDERS — If a finer product is wanted (from 60 to 100 mesh), the Sturtevant Sample Grinder is the only reliable machine made for the laboratory. Quickly and easily cleaned, of good capacity, capable of working a great variety of substances, and more durable than any other. Its parts are cheaply replaced. It is a high-class machine.

SCREENS — The only first class laboratory Screens built. Large capacity, easily cleaned, and durable.

SAMPLING — Good sampling tests may make or save a fortune. The laboratory should not only assure the value of ores, but point the way to the machinery plant that can best work them. The laboratory equipment furnished by the Sturtevant Mill Company is a mill, and no expense is spared to make its work duplicate that at the mine. Ask users in the best works both at home and abroad.

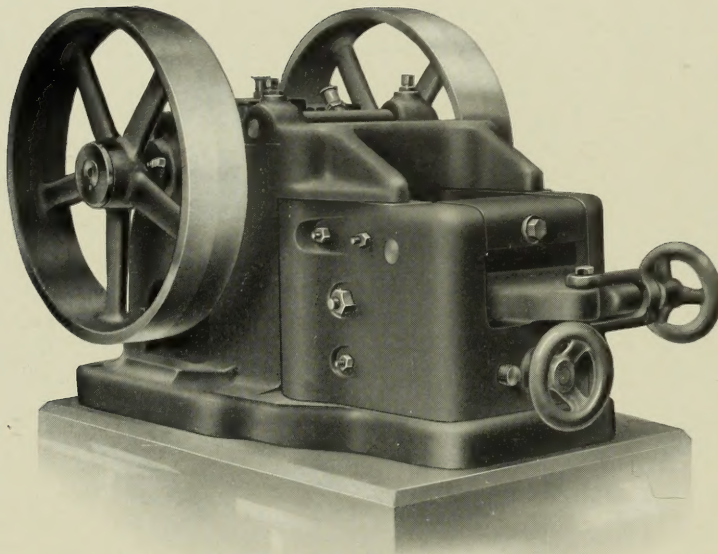
LABORATORY MACHINERY



Patented — Patent applied for

The Most Complete Sample Crushing and Grinding plant built

STURTEVANT LABORATORY CRUSHERS



Patented

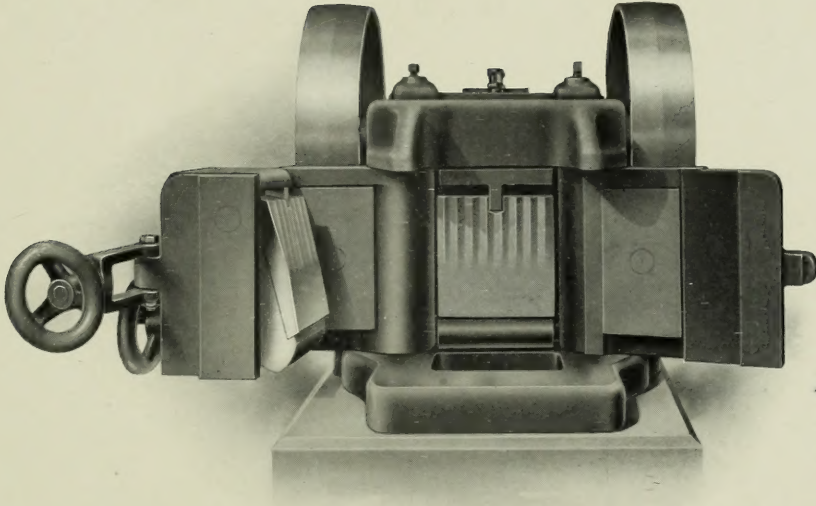
2 x 6 Laboratory Crusher

LABORATORY CRUSHERS

Sturtevant Laboratory Crushers differ from all others in many essential points. They are superior machines, not only better in design and construction, but also exceed all others in quantity and quality of output.

A Laboratory Crusher should be, and these alone are, just as good in every respect as a machine of full size, and they are capable of running 24 hours every day, and crushing the

STURTEVANT LABORATORY CRUSHERS



2 x 6 Laboratory Crusher

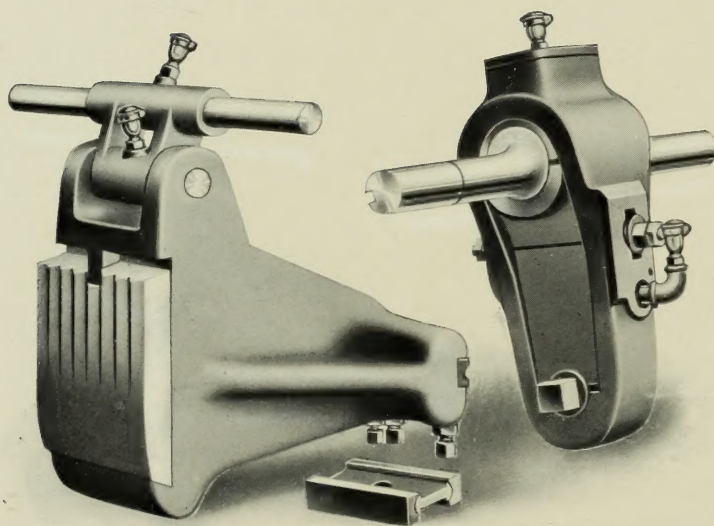
Quick Accessibility

For rapid and thorough cleaning

hardest rocks and ore without excessive wear. It requires just as much strength to crush a 2" piece of rock in a small Crusher as in a large one.

Remembering these points it will be noted that Sturtevant Laboratory Crushers are beyond comparison better than any others. They are large machines in miniature, but of even greater strength, and capable of a larger range of adjustment for fine, coarse, or intermediate crushing. They weigh from 600 to 700 lbs., are fitted with Manganese Steel jaw plates, reversible shields, steel pitman, tool steel toggles working in steel seats; are fitted with carefully designed take-ups, and all the bearings, shafts and working parts are of large proportions.

STURTEVANT LABORATORY CRUSHERS



Jaw action of 2 x 6 Laboratory Crusher.

This is the special Roll Jaw action which has given us world-wide reputation as the only manufacturers of really fine Crushers for hard rocks.

These massive little machines may be set up to crush as fine as $\frac{1}{8}$ ". Because the crushing jaw has a long, rolling motion, the moving jaw rolls over the material, which drops out without clogging, unless it is really sticky.

Their capacities vary from a few hundred pounds per hour, at finest settings, to 600 or 700 pounds, when opened for coarser grades of work. In accessibility they are almost perfect, allowing quick and easy cleaning, to prevent salting of samples.

Thus, in this little machine, the purchaser is sure of getting the best that can be built for a reasonable price. There are hundreds at work all over the country and in nearly every large mining school and assaying laboratory. Any number of references of the highest character can be supplied.

Pulley, 18 in. x 3 in. Speed, 350 revolutions per minute.

Length, 2 ft. 2 in.; Width, 1 ft. 11 in.; Height, 1 ft. 8 in.; Weight, 900 lbs.

Less than 1 horse power. Code word, *Baer*.

LABORATORY MACHINERY

A Few Users of Sturtevant Laboratory Machinery.

Champion Copper Co.	St. Lawrence Pyrites Co.	Hoepfner Refin. Co.
H. S. Church	Carbon Clay & Mining Co.	St. Louis Sampling Works
Mineral Point Zinc Co.	Witherbee, Sherman & Co.	Ymir Gold Mining Co.
S. Sykes & Co.	Emerson & Norris Co.	T. A. Edison Laboratory
Liberty Bell Gold Mining Co.	Buena Vista Iron Co.	Iron Belt Mfg. Co.
Spanish-American Iron Co.	Calumet Ore Co.	Everett Cobb
Cochrane Chemical Co.	Republic Iron Co.	Bachelor Gold Mining Co.
David H. Curran	Florence Iron River Co.	Imperial Ore Reduction Co.
Whitlatch Mining Co.	Armour Fertilizer Works	U. S. Assay Office
Rare Metals Reduction Co.	National Acid Co.	Carbon Iron & Steel Co.
Warwick Iron & Steel Co.	Mass. Institute Technology	Simplex Electric Co.
Baltimore Copper, S. & R. Co.	United Verde Copper Co.	Queen City Improvement Co.
Williams & Clark Fert. Works	Clover Leaf Gold Mining Co.	F. H. Davis and Co.
Tenn. Coal, Iron & R. R. Co.	University of Wisconsin	Eimer & Amend
Transvaal Copper Mining Co.	Maryland Steel Co.	A. H. Gunn & Co.
Amer. Brake Shoe & Fry. Co.	City of N. Y.	Tenn. Coal & Iron Co.
Carr Bros.	Gillinder & Sons	Dominion of Canada
Minas Tecolotes & Anexas	Sturtevant Eng. Co.	Kinthead Mill Co.
J. W. Evans	Ashley & Slack	Telluride Reduction Co.
Anthony Blum	Takata & Co.	Prof. Sharpless
Illinois Zinc Co.	University of Idaho	Amer. Smltg. and Refining Co.
Joe Dandy Mining Co.	Max Cohen	Tatham Bros.
Iowa State College	Campania Minera Angustias	Donoza Mining Co.
Sandstorm Mining Co.	Andrew S. McCreath & Son	Ampere Electric Co.
Pittsburgh Gas & Coke Co.	Schweyer & Liess	Portland Cement Co.
Verone Mining Co.	Tenn. Copper Co.	Tenn. Phosphate Co.
El Oro Mining & Ry. Co.	B. C. Standard Mining Co.	Colonial Construction Co.
Vivian Mine	Coe Brass Mfg. Co.	Greys Ferry Pottery Co.
Mikado Mine	Willson Aluminum Co.	Silver Lake Mines Co.
Carey Mine	Young & Park	Phoenix Glass Co.
Brotherton Mine	Cayuga Lake Cement Co.	Tonopah Mining Co.
Chas. L. Constant	Reane Iron Co.	Henry Nelms & Son
Climax Mine	Tonopah Extension Mining Co.	Dr. L. Pitkin
Helena & Livingstone S. & R. Co.	Stillwell & Gladding Co.	D. F. Sherwood
Cambria Steel Co.	Nashville Carbon & Oil Co.	Georgia Iron & Coal Co.
American Trading Co.	Cerro de Pasco Mining Co.	Parral Cons. Mines Co.
J. R. Beaver Eng. Co.	Glens Falls Portland Cement Co.	General Electric Co.
Lowell Textile School	Amer. Emery Wheel Co.	A. R. Williams Machinery Co.
Kosmos Portland Cement Co.	Old Hundred Mines	C. H. Huff
American Smelting & Ref. Co.	Harsman & Franklin	University of Kansas
P. Kirkegaard, M. E.	Colo. School of Mines	Hercules Metal Co.
Standard Ideal Sanitary Co.	Esperanza Mng. Co.	Colorado Fuel & Iron Co.
E. Basadre Forero	Colo. Fuel & Iron Co.	Penna. Iron Mining Co.
Canadian Copper Co.	La Nacional, Compra de Miner- ales y Metals	Warner & Co.
Utah Cons. Mining Co.	N. P. Pratt Laboratory	Compania Estanifera "Los Angeles"
Pittsburgh Testing Laboratory	Winkle Portland Cement Co.	Stillwell Laboratory
Waterbury Brass Co.	British-Amer. Gold Mining Co.	Gregorio Riveros
American Clay Machinery Co.	Norton Co.	Monadnock Laboratory
Wills & Co.	Edison Port. Cement Co.	State Geological Survey
Cananea Cons. Copper Co., S. A.	Payne Separator Co.	Dewey Ore Reduction Corpn.
Utah Cons. Mining Co.		Milton L. Hersey, M. Sc.
Mexican Mines of El Oro		Crown Chemical Co.

LARGE SAMPLE CRUSHERS

LARGE SAMPLING PLANT

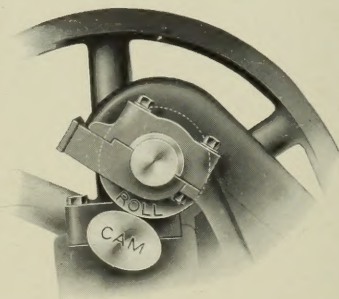
There is a great demand for larger sampling machinery than is usually supplied for laboratories, and we have therefore designed a series of larger machines to meet this demand including Crushers, Rolls and Screens.

The cut on opposite page shows our special Steel Plate Roll Jaw Fine Crusher, having a receiving opening of 5 x 10". This machine is capable of a wide range of adjustment, as the jaws can be set as close as $\frac{1}{2}$ ", or opened to $\frac{3}{4}$ ", its capacity ranging from 1 to 3 tons per hour.

It requires about 3 h. p. to drive, has our special double cam and roller action which allows two crushing strikes to each revolution, is built almost entirely of steel, and has our unbreakably strong side plates securely rabbitted to the front anvil casting, and secured to the rear cross beam which carries the bearings, independently of the frame. This type represents the strongest Jaw Crushers ever produced.

The rocker arm is of cast steel, also the swing jaw; thus practically the only cast iron parts are the front and rear castings. It is unusually get-at-able, and weighs only about one-half as much as cast-iron Crushers of equal output and less strength.

We strongly recommend this machine for all laboratories requiring larger machinery than that shown in the first part of this catalogue.



LARGE SAMPLE CRUSHERS

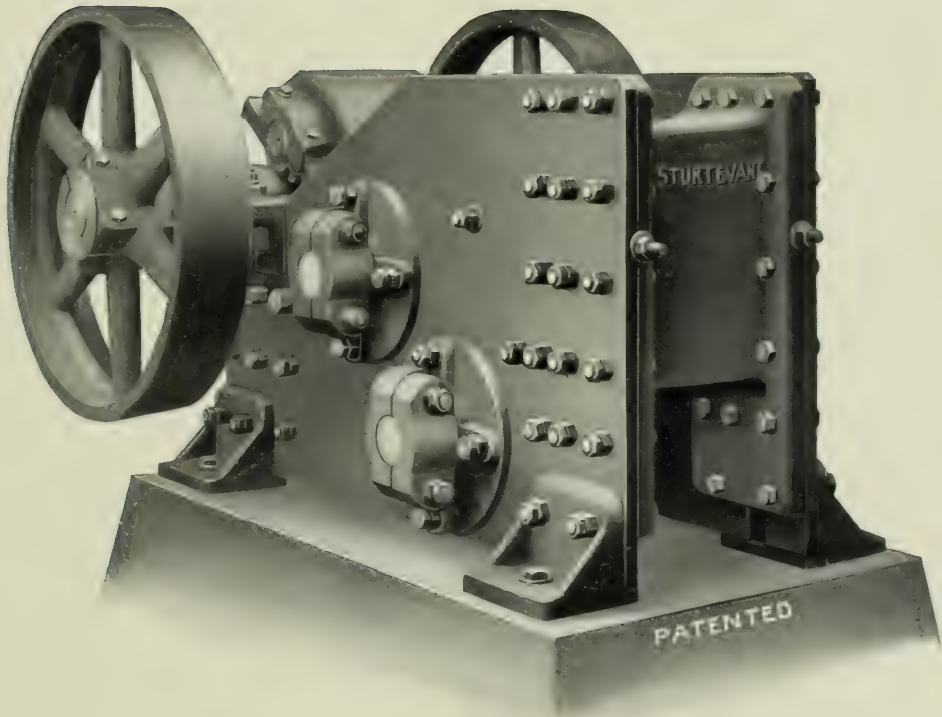
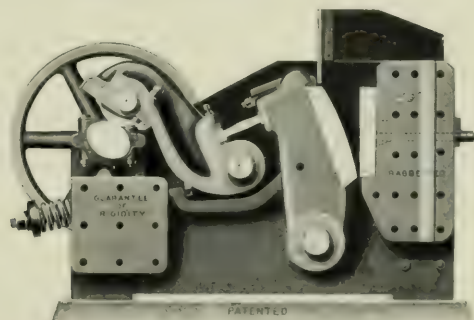


Plate Steel Roll Jaw Crusher for Fine Crushing (1-2 inch)
Two Jaw Nips to each revolution of fly wheel.

Sectional View
Plate Steel Roll Jaw Fine Crusher

They run with less noise and
jar than any other.



STURTEVANT LARGE SAMPLE ROLLS

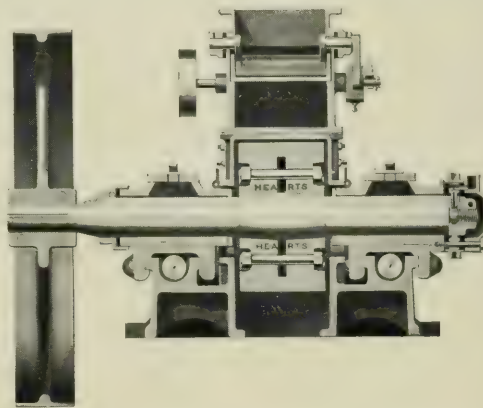
LARGE SAMPLING ROLLS

These Rolls were built to follow the 5 x 10 large Roll Jaw Sampling Crusher shown on page 17, to crush its output from $\frac{1}{2}$ inch to 20 mesh or more, or less. These Rolls are built on exactly the same principles as our large Crushing Rolls for mines, and with all the latest improvements.

There are springs back of all four car-box bearings, giving absolute balance. The roll shells are high-carbon forgings or Chrome Steel, and they have our special double-throw automatic feeder.

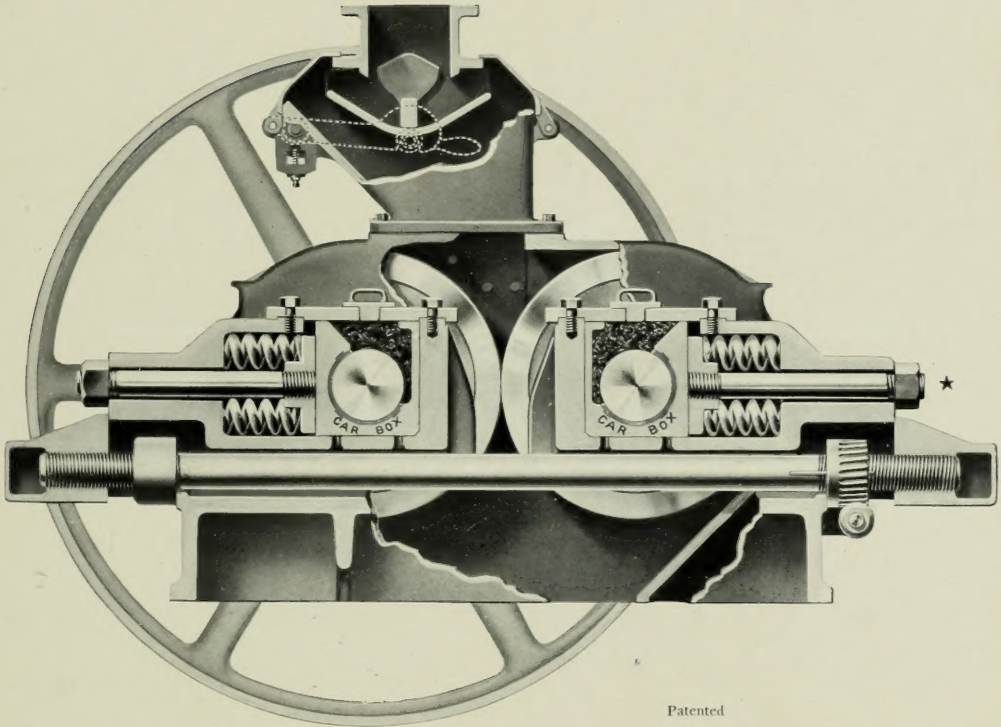
In sampling work, ease of adjustment is of prime importance, and in this machine by simply turning a cross-shaft handle the distance between the roll faces is regulated to a nicety. They cannot be put out of alignment, and no shims or other auxiliaries are required. The position of the shields is never changed, because the central feed line is always the same.

This machine carries rolls 16" in diameter by 10" face, requires about 3 H. P. to drive, is practically dustless, and there is nothing on the market which can compare favorably with it for this class of work.



Notice size of bearings and shaft and general proportions.

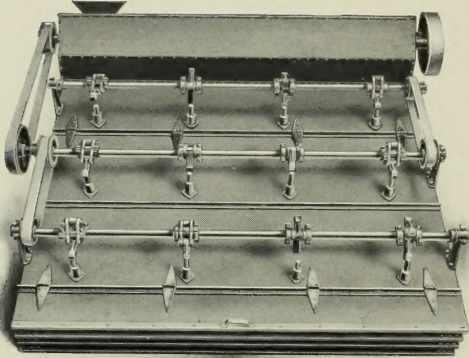
STURTEVANT LARGE SAMPLE ROLLS



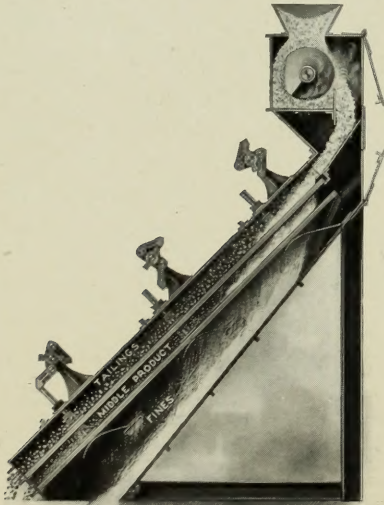
Notice that springs are placed behind each car-box bearing, causing all crushing shocks to be exactly balanced, and that only the car-boxes move in crushing instead of the massive pedestals, the movements of which cause the heavy shocks and wear of the expensive frames and pedestals of other rolls.

★These nuts are removed when the roll is in use, or backed away from the pedestal. They are only needed to pull back the springs to permit of removal of car-box bearings and shaft.

LARGE SAMPLE SCREENS

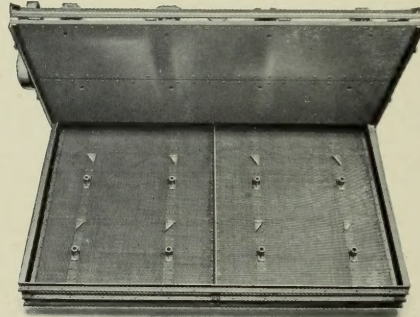


more than usually accurate; in fact every convenience has been applied to make them as efficient as our larger Newaygo Separators which are so widely and so favorably known.



NEWAYGO LARGE SAMPLING SCREENS

Here we have a power Screen for laboratory use, of small size, yet able to handle with ease several tons per hour. The screens therein may be quickly changed for variation of product. The wire is given such efficient vibration as is



The No. 1 size Screen has a 6' x 6' screening surface. Separations are made with one, two or three screens, enabling a single Separator to turn out from one to four products. Their range of work is from $\frac{1}{4}$ " to 200 mesh. We have thousands in use which are everywhere giving excellent satisfaction.

CATALOGUE No. 67A

